both Type 1 and Type 2 mechanisms, the photoreaction proceeds via the lowest triplet state of the sensitizer. Hence, a relatively long triplet lifetime is required for effective phototherapy. In contrast, a relatively short triplet lifetime is required for diagnostic imaging to avoid photodamage to the tissue caused by photosensitizers.

A3

Amend the paragraph beginning at page 6, line 23, as follows:

Thus, there is a need to develop effective phototherapeutic agents that operate via the Type 1 mechanism. Phototherapeutic efficacy can be further enhanced if the excited state photosensitizers can generate reactive intermediates such as free radicals, nitrenes, carbenes, and the like, which have much longer lifetimes than the excited chromophore and have been shown to cause considerable cell injury. Thus, there is a need in the art to develop effective phototherapeutic agents. Phototherapeutic efficacy can be substantially improved if both Type 1 and Type 2 units are integrated into a single compound. This can be accomplished using three types of formulations: (a) homogeneous mixtures of Type 1 or Type 2 agents alone, (b) heterogeneous mixtures of Type 1 and Type 2 agents, or (c) a single molecular entity containing both Type 1 and Type 2 functionalities.

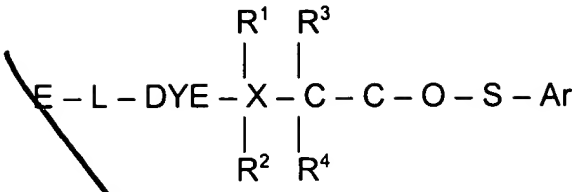
A4

IN THE CLAIMS

Amend claims 1, 2, 12, and 14 as follows:

A5

1. (AMENDED) A composition comprising a pharmaceutically acceptable carrier and sulfenates having the formula



wherein E is selected from the group consisting of somatostatin receptor binding molecules, heat sensitive bacterioendotoxin receptor binding molecules, neurotensin receptor binding molecules, bombesin receptor binding molecules, cholecystekinin receptor binding molecules, steroid receptor binding molecules, and carbohydrate receptor binding molecules, and dihydoxyindolecarboxylic acid; L and X are independently selected from the group consisting of -(R^5)NOC-, -(R^5)NOCCH_2O-, -(R^5)NOCCH_2CH_2O-, -OCN(R^5)-, -HNC(=S)NH-, and HNC(=O)NH-; DYE is an aromatic or a heteroaromatic radical of cyanines which are conjugated azamethine polyene systems containing a cationic nitrogen atom at one end and a neutral, tertiary nitrogen at the other end, indocyanines, phthalocyanines, rhodamines, phenoxazines, phenothiazines, phenoselenazines, fluoresceins, porphyrins, benzoporphyrins, squaraines, corrins, croconiums, azo dyes, methine dyes, indolenium dyes, crellins, or hypocrellins; R^1 to R^5 are independently selected from the group comprising hydrogen, C1-C10 alkyl, C5-C10 aryl, C1-C10 polyhydroxyalkyl, and C1-C10 polyalkoxyalkyl; and Ar is an aromatic or heteroaromatic radical of benzenes, naphthalenes, naphthoquinones, diphenylmethanes, fluorenes, anthracenes, anthraquinones, phenanthrenes, tetracenes, naphthacenediones, pyridines, quinolines, isoquinolines, indoles, isoindoles, pyrroles, imidiazoles, oxazoles, thiazoles, pyrazoles, pyrazines, purines, benzimidazoles, furans, benzofurans, dibenzofurans, carbazoles, acridines,

acridones, phenanthridines, thiophenes, benzothiophenes, dibenzothiophenes, xanthenes, xanthones, flavones, coumarins, or anthacylines.

B2 cont

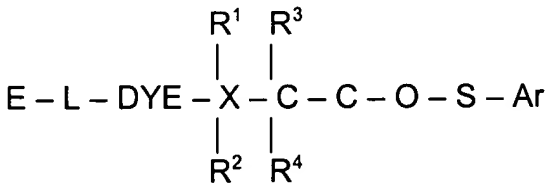
2. (AMENDED) The compound of claim 1 wherein E is selected from the group consisting of somatostatin receptor binding molecules, heat sensitive bacterioendotoxin receptor binding molecules, neurotensin receptor binding molecules, bombesin receptor binding molecules, cholecystekinin receptor binding molecules, and steroid receptor binding molecules; L and X are independently selected from the group consisting of -(R^5)NOC-, and -(R^5)NOCCH$_2$O -; DYE is a cyanine; R^1 to R^5 are independently selected from the group consisting of hydrogen, C1-C10 alkyl, C5-C10 aryl, and C1-C10 polyhydroxyalkyl; and Ar is an aromatic benzene radical.

A5

B2 cont

12. (AMENDED) A method of performing a phototherapeutic procedure which comprises the steps of:

(a) administering to a target tissue in an animal an effective amount of sulfenate photosensitizers in a pharmaceutically acceptable carrier, the sulfenates having the formula



wherein E is selected from the group consisting of somatostatin receptor binding molecules, heat sensitive bacterioendotoxin receptor binding molecules, neurotensin

A6

receptor binding molecules, bombesin receptor binding molecules, cholecystekinin receptor binding molecules, steroid receptor binding molecules, and carbohydrate receptor binding molecules, and dihydoxyindolecarboxylic acid; L and X are independently selected from the group consisting of -(R^5)NOC-, -(R^5)NOCCH$_2$O-, -(R^5)NOCCH$_2$CH$_2$O-, -OCN(R^5)-, -HNC(=S)NH-, and HNC(=O)NH-; DYE is an aromatic or a heteroaromatic radical of cyanines which are conjugated azamethine polyene systems containing a cationic nitrogen atom at one end and a neutral, tertiary nitrogen at the other end, indocyanines, phthalocyanines, rhodamines, phenoxazines, phenothiazines, phenoselenazines, fluoresceins, porphyrins, benzoporphyrins, squaraines, corrins, croconiums, azo dyes, methine dyes, indolenium dyes, crellins, or hypocrellins; R^1 to R^5 are independently selected from the group comprising hydrogen, C1-C10 alkyl, C5-C10 aryl, C1-C10 polyhydroxyalkyl, and C1-C10 polyalkoxyalkyl; and Ar is an aromatic or heteroaromatic radical of benzenes, naphthalenes, naphthoquinones, diphenylmethanes, fluorenes, anthracenes, anthraquinones, phenanthrenes, tetracenes, naphthacenediones, pyridines, quinolines, isoquinolines, indoles, isoindoles, pyrroles, imidiazoles, oxazoles, thiazoles, pyrazoles, pyrazines, purines, benzimidazoles, furans, benzofurans, dibenzofurans, carbazoles, acridines, acridones, phenanthridines, thiophenes, benzothiophenes, dibenzothiophenes, xanthenes, xanthones, flavones, coumarins, or anthacylines; and

(b) exposing said target tissues with the light of wavelength between 300 and 950 nm with sufficient power and fluence rate to cause necrosis or apoptosis of the said target tissue.